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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/802,693	03/08/2001	Takashi Hiroi	16869P017810	8024

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EXAMINER

WERNER, BRIAN P

ART UNIT	PAPER NUMBER
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2621

DATE MAILED: 06/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/802,693

Applicant(s)

HIROI ET AL.

Examiner

Brian P. Werner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2001 and 08 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 34-55 and 66-69 is/are pending in the application.
- 4a) Of the above claim(s) 37,38,47,50,54,55 and 66-69 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 34-36,39-46,48,49 and 51-53 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 September 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of Species I in Paper No. 5 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claims 34-36, 39-46, 48, 49 and 51-53 are examined herein; claims 37, 38, 47, 50, 54, 55 and 66-69 being withdrawn from consideration.
2. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### ***Response to Amendment***

3. The preliminary amendments received on March 8, 2001, and April 8, 2003 have been entered.

### ***Drawings***

4. The corrected or substitute drawings were received on September 24, 2001. These drawings are acceptable.

### ***Claim Objections***

5. The following quotations of 37 CFR § 1.75(a) is the basis of objection:
- (a) The specification must conclude with a claim particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention or discovery.
6. Claim 36 is objected to under 37 CFR § 1.75(a) as failing to particularly point out and distinctly claim the subject matter which the applicant regards as his invention or discovery. Claim 36 lacks an antecedent basis for the term "said first threshold". It will be assumed, for examination purposes, that said "first threshold" corresponds to the "first standard" in line 3 of claim 1. Formal correction is required.

### ***Specification***

7. The disclosure is objected to because of the following informalities: Page 1 of the specification is missing the serial number of the priority US application. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claim 34 is rejected under 35 U.S.C. 102(b) as being anticipated by Young et al. (US 4,870,357 A).

Regarding claim 34, Young discloses a method comprising:

displaying a first standard on a display (a first threshold is selected by a user based on a histogram; see “select a threshold” at column 10, line 12; “a specific threshold level is selected” at column 10, line 21; the threshold along with the histogram are displayed to the user; i.e., “graphically displayed” at column 10, line 18, and “presents the test results to the user” at column 10, line 27), the first standard used to select defect candidate image indications to be shown on a defect candidate distribution screen on the display (the threshold is used to select and display candidate defects; i.e., “faulty LCD cells” at column 10, line 26; “presents the test results to the user” at column 10, line 27; “user interface that allows a user to view the various images and their associated histograms, or enlarge and reduce the images, and to set differing threshold levels” at column 13, lines 5-8); and

changing the first standard to a second standard (the threshold is modified by the user; i.e., “modification of the thresholding” at column 10, line 28; “set differing threshold levels” at column 13, line 8), where the defect candidate image indications on the defect distribution screen change responsive to the second standard (the results of the modified threshold are also displayed to the user; i.e., “view the various images” at column 13, line 6; the reason they are displayed is that the user subsequently perform “human checking” at column 12, line 47).

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10. Claim 34, 35, 39-46, 48, 49 and 51-53 are rejected under 35 U.S.C. 102(e) as being anticipated by Schemmel et al. (US 6,504,948 B1).

Regarding claim 34, Schemmel discloses a method comprising:

displaying a first standard on a display (figure 4, numeral 80; i.e., "TRIP = 9"), the first standard used to select defect candidate ("potential defect" at column 10, line 52) image indications ("flags" at column 7, line 11) to be shown on a defect candidate distribution screen on the display ("displayed on a display unit 26 as a list or as a graphical representation" at column 12, line 4); and

changing the first standard to a second standard ("trip point 80 can be changed manually or automatically" at column 10, line 24), where the defect candidate image indications on the defect distribution screen change responsive to the second standard ("displayed on a display unit 26 as a list or as a graphical representation" at column 12, line 4; from the Schemmel reference, taken properly as a whole, it is clear that during the four phases of inspection, the results of defect detection are displayed to the operator each time; thus, when the operator determines that the threshold must be changed, then the new results [i.e., those corresponding to the changed defect threshold] are also displayed).

Regarding claims 35, 39, 40 and 41, Schemmel discloses a method comprising:

displaying a two-dimensional defect candidate distribution ("displayed on a display unit 26 as a list or as a graphical representation" at column 12, line 4) for a threshold (figure 4, numeral 80; i.e., "TRIP = 9") on a first screen ("display unit" at column 12, line 4), said two-dimensional distribution comprising an indication of a

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candidate defect ("flags" at column 7, line 11; graphical representation" at column 12, line 4); and

displaying on a second screen ("second display unit 36" at column 4, line 42) an expanded view of the defect candidate ("high resolution" at column 4, line 38), responsive to a selection on the indication on the first screen ("touching the screen" at column 4, line 23).

Regarding claims 40 and 41, the defect image displayed in the second display is an expanded, high resolution image of the candidate defect image (i.e., scanned again by the high resolution optics responsive to a user selection; i.e., "immediate manual inspection" at column 4, line 39; "visual inspection" at column 12, line 14).

Regarding claims 42 and 43, a threshold screen is provided (figure 4, numeral 80) which also depicts defect density (i.e., the histogram depicts the density of the defects which exceed the threshold).

Regarding claim 44, the displayed defects (i.e., the "flags" at column 7, line 11 and graphical representation" at column 12, line 4) are responsive to a user selected threshold ("trip point 80 can be changed manually or automatically" at column 10, line 24).

Regarding claims 45 and 46, defects are displayed by type using different symbols ("displayed as boxes, which may be in colors, representing the different results" at column 12, line 9; two boxes, each a different color indicating a different result, are different symbols; Note: The claim does not specify how they are different).

Regarding claim 48, symbols are displayed (i.e., the “flags” at column 7, line 11 and graphical representation” at column 12, line 4).

Regarding claim 49, given that the symbols are displayed on a monitor, then the symbols naturally have a gray scale value. Alternately, the histogram at figure 4 graphically displays defects according to gray scale value.

Regarding claims 51 and 52, the result can be enhanced by color (“colors, representing the different results” at column 12, line 9).

Regarding claim 53, black and white displayed results are anticipated by the reference, given that the display using “color” is an alternate embodiment.

11. Claims 34 and 36 are rejected under 35 U.S.C. 102(e) as being anticipated by Noguchi et al. (US 6,411,377 B1).

Regarding claim 34, Noguchi discloses a method comprising:

displaying a first standard on a display (“m1” at figure 42, step S44; the various displays are depicted in figures 43-45), the first standard used to select defect candidate image indications to be shown on a defect candidate distribution screen on the display (as depicted in figures 43-45); and

changing the first standard to a second standard (figure 42, numeral S50), where the defect candidate image indications on the defect distribution screen change responsive to the second standard (any change to the threshold will change the resultant defect display screens at figures 43-45).



Regarding claim 36, the first threshold is calculated ("setting a threshold value" at column 35, line 38; "computed" at line 37) using an electron beam noise value ("noise generated during the detection" at column 35, line 19) for a SEM system ("SEM" at column 55, line 10; the process described in the Noguchi reference is applicable to detection by a SEM, and therefore the setting of a threshold from the detection noise is applicable to noise from the SEM detection).

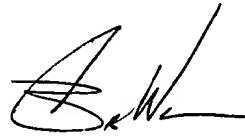
### ***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian P. Werner, whose telephone number is 703-306-3037. The examiner can normally be reached on M-F, 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H. Boudreau can be reached on 703-305-4706. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.

Brian Werner  
Primary Examiner  
June 23, 2003



**BRIAN WERNER**  
**PRIMARY EXAMINER**